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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/427,675	10/27/1999	ERIC JACQUINOT	JACQUINOT=7	3607

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EXAMINER

DEO, DUY VU NGUYEN

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 01/15/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/427,675

Applicant(s)

JACQUINOT ET AL.

Examiner

DuyVu n Deo

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquinot et al. (US 6,043,159) and Grover et al. (US 5,759,917).

Jacquinot teaches a polishing an integrated circuit in which isolation layer, including silicon oxide and silicon nitride, is polished by an abrasive composition which comprises an aqueous acid suspension of individualized colloidal silica particles not linked to each other by siloxane bonds. The pH of the composition is about 1.5-4, the abrasives have diameters about 10-50 nm and a concentration of about 15-30% (col. 2, line 39-65; col. 4, line 1-10). Unlike claimed invention he doesn't describe that the support is impregnated with an abrasive liquid composition. However, since the polishing pad is soaked with the abrasive liquid composition during the polishing, the abrasive liquid composition would get into the abrasive pad and therefore, this would create claimed polishing pad that impregnated with an abrasive composition.

Unlike claimed invention, Jacquinot doesn't describe having a surfactant in the abrasive composition. Grover teaches a method of polishing the oxide layer using a surfactant in the abrasive composition. The surfactant can be anionic or nonionic (col. 6, line 38-48). It would

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have been obvious for one skill in the art at the time of the invention in light of Grover to add a surfactant because Grover teaches that a surfactant is used to improve the within-wafer-non-uniformity (WIWNU) of the wafers, thereby improving the surface of the wafer and reducing wafer defects (col. 6, line 45-48). The combined method would read on claimed the abrasive liquid composition consists essentially of an aqueous acid suspension of individualized colloidal silica particles not linked to each other by siloxane bonds and a surfactant or the abrasive liquid composition is substantially free of other components.

Referring to claims 31-36, Grover teaches that the surfactant concentration should be at 0.001-10%, and he teaches that it will typically vary depending on the particular surfactant selected and the nature of the surface of the metal oxide abrasive and the amount of additive is adjusted to achieve the desired concentration in the polishing slurry (col. 6, line 49-64).

Referring to claim 40, Grover further describes the layer used in isolation of integrated circuit, taught by Jacquinet, comprises oxide and nitride layer (col. 2, line 20-31).

Response to Arguments

3. Applicant's arguments filed 12/26/02 have been fully considered but they are not persuasive.

Referring to applicant's argument that Grover teaches a different way than the present invention, it therefore teaches away from the present invention. This is found unpersuasive because an alternative way doesn't mean teaching away from the invention. There is no basis for the argument that Grover teaching away from the invention when he describes another way for polishing oxide layer. Furthermore, applicant's argument is not relevant to the rejection because

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it doesn't traverse the motivation for adding a surfactant provided in the rejection and Grover is a secondary reference. There is no modification to Grover's teaching.

In response to applicant's argument that Grover doesn't teach that a surfactant has any ability to improve the oxide to nitride selectivity of a CMP slurry, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Referring to applicant's argument about one skill in the art would must use a carboxylic acid, a salt, and a soluble cerium from Grover, this is found unpersuasive because it has nothing to do with the rejection above where the suggestion is that to add a surfactant, not a carboxylic acid, a salt, nor a soluble cerium.

Referring to applicant's argument that Grover teaches using the surfactant as an optional is acknowledged. However, applicant has not traversed the fact that a surfactant is added in order to improve stability of the slurry and the within-wafer-non-uniformity (WIWNU) as taught by Grover.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

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Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 703-305-0515.

DVD
January 10, 2003


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